



Patent Application of
Kenneth Johnson
for

~~PORTABLE BOW PRESS FOR COMPOUND BOWS WITH EITHER TWO PIECE LIMBS OR~~
ONE PIECE LIMBS UNIVERSAL COMPOUND BOW PRESS

BACKGROUND OF THE INVENTION

This invention relates generally to the sport of archery, and more specifically to compound bows. The invention is a portable bow press which allows an archer to relieve the tension on the limbs, string and cables of high powered compound bow having either two-piece limbs or one-piece limbs with greater ease and safety for the archer and less risk of damage to the bow's limbs and riser.

Prior Art

Paff, US Patent 5,125,389 discloses a tensioning apparatus for tensioning of the limbs of a compound bow with one-piece limbs. Thus enabling the removal and replacement of the compound bow's string and cables. This apparatus uses the same or similar means of connecting to the bow's limbs as Rezmer, US Patent, 4,599,987 and Egusquiza, US Patent, 5,425,350, and Gissel, US Patent, 5,746,192. They use a "T" shaped end, a loop and pin arrangement, or a cord or cable arrangement, that is attached inside the cam groove, at the closed end of single piece bow limb's. Rezmer's figure 3. shows how the above limb attachments uses the closed end of the cam groove to keep the attachments from sliding toward the riser. Because this type of attachment uses the closed end of the cam groove to prevent the attachment from sliding toward the riser of the bow, none of the devices listed above can be used to repair compound bows having two-piece limbs. ~~The first photo below~~ Fig 5 Prior Art shows a two-piece bow limb. These devices are limited to compound bows with one-piece limbs. ~~The second photo below~~ Fig.6 Prior Art shows a one-piece bow limb. Two-piece limbs having cam grooves that extend to the riser, require a tensioning device with a means of attachment different from those described above.

the riser where the bow limbs are thicker. Steven's device, like all the devices mentioned earlier, is also unable to flex the entire length of the bow's limbs.

Steven's device also applies all the force of its adjusting device to the center of the bow's riser. By applying pressure to the bow's riser at the center, combined with the position at which the force is applied to the limbs, there is a high probability of damaging the riser and the limbs. This risk is increased when maintaining high powered bows.

There are two other devices that need to be added to this prior art. Neither of these devices were found during the patent search.

The Bowmaster Portable Bow Press Quad Bracket is shown in ~~the following picture~~ Fig.7 Prior Art taken from Archery Center International Plus's 20001 catalog, page 349. This device is an adapter for Rezmer, US Patent, 4,599,987 and Egusquiza, US Patent, 5,425,350, and Gissel, US Patent, 5,746,192 devices. It adapts the listed devices to two-piece bow limbs. As the picture shows it attaches to the end of the split limb and hanging next to or on top of the bow string. As described by Bow Master, in the case of bows with large cams, the bracket is hung between the string and the cables. Either position would cause a great amount of difficulty for the archer since there is no space to operate the adjusting device. It also risks damaging the string and cables by rubbing against them.

These brackets have curved upper ends which can not mate with limb having square or flared ends. This limits the brackets usefulness.

The Cardoza Handi-bow Press is shown in ~~the preceding picture~~ Fig.8 Prior Art taken from Archery Center International Plus's 20001 catalog, page 349. This bow press is attached to the bow in the same area as the devices of Rezmer, US Patent, 4,599,987 and Egusquiza, US Patent, 5,425,350, and Gissel, US Patent, 5,746,192. Therefore it does not flex the entire bow limb. It also risks over stressing the bow's limbs.

The length of the brackets (b) between where they contact the bow limb and the adjustment device, combined with the mounting of the brackets (b) on the side of the bow, requires the brackets be reinforced. This increases the weight and cost of Cardoza's bow press and makes it unsuitable for pressing high powered bows.

Being positioned on the side of the bow can cause Cardoza's press to apply force off center, twisting the limbs and damaging both the bow's limbs and riser.

There is a need in the archery art for an inexpensive light weight portable compound bow press that allows an archer to disassembly and assembly of high powered compound bows with both two-piece limbs and one-piece limbs without over-stressing the bows limbs or risking damage to the

20 First removable engagement device

21 Second removable engagement device

22 Work space between adjusting device, and bow string and cables

5 24 Portion of first extending member that provides mechanical advantage.

25 Portion of second extending member that provides mechanical advantage.

26 Outer end of first two-piece bow limb

27 Outer end of second two-piece bow limb

28 Bow string and cables

10 30 Central position for adjustable connection of first extending member to first end of adjusting device

32 Central position for adjustable connection of second extending member and second end of adjusting device

15 34 Aligning device to aid in aligning first extending member with outer end of first two-piece bow limb

36 Aligning device to aid in aligning second extending member with outer end of second two-piece bow limb

20

Description of drawings

Fig.1 is an isometric drawing of the device of this invention mounted on a bow with two piece limbs.

25 Fig.2 is a side view of the device of this invention

Fig.3 is a view of a means of engagement of the limb extension and the bow limb.

Fig.4 is a second view of a means of engagement of the limb extension and the bow limb.

Fig.5 is a photo of a two piece bow limb described in the prior art.

30 Fig.6 is a photo of a one piece bow limb described in the prior art.

Fig.7 is a picture of a drawing of the Bowmaster bracket.

Fig.8 is a picture of a drawing of Cardoza Handi-Bow Press.

35 **Description of drawings Detailed Description of the Drawings**

Fig. 1 shows an isometric view of a portable bow press of this invention 4 attached to a compound bow having two-piece limbs 2. Compound bow 2 having first two-piece limb 6 and the second two-piece limb 8, and riser 10. The compound bow press 4 consisting of first extending member 12, second extending member 14, adjusting device 16, first removable engagement device